



**TideStation MTU821-WTR
Brochure
V1.2**

The MTU821-WTR Radio Tide Stations offer tide fluctuation *measurement* as well tide fluctuation *monitoring* using ‘over-the-air’ messages. They fit in all type of tide telemetry applications due to their rugged design and the availability of a wide choice of analog and digital input/output ports.

The MTU821-WTR comes in a fiberglass-reinforced polyester splash proof case protected to IP66 and is designed for outside operation.

All MTU821 units operate as ‘*Radio Tide Transmitter*’ as well as ‘*Radio Tide Receiver*’. This eliminates the need to keep an inventory of separate transmitters and receivers: one box does it all.

Surveyors operating all over the world know very well that operating channels permitted by local authorities vary widely. Our Radio Tide Stations contain a *synthesized wide-band transceiver* and channel switching is only a matter of seconds.

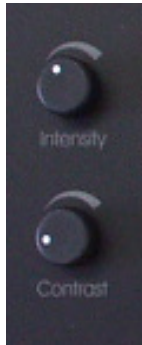
The MTU821-WTR employs a *Vyner compatible protocol* making combined operation of MTU821, Vyner MK-II units and CES TGM104 & TGM105 stations possible.

The MTU radio tide stations are modern, microprocessor based systems with *large LCD-display* and requiring only a few controls to operate. Station configuration, channel selection and transducer selection are completely *software controlled*: no screwdrivers are required to change operating modes, no configuration jumpers are to be set.

And last but not least: our radio tide stations operate on *AC supply* as well as *on internal battery*. The integrated charger control circuitry allows battery charging using power from AC supply or from *solar panel*. The charging electronics prevents overcharging and excessive battery discharging.



Features:

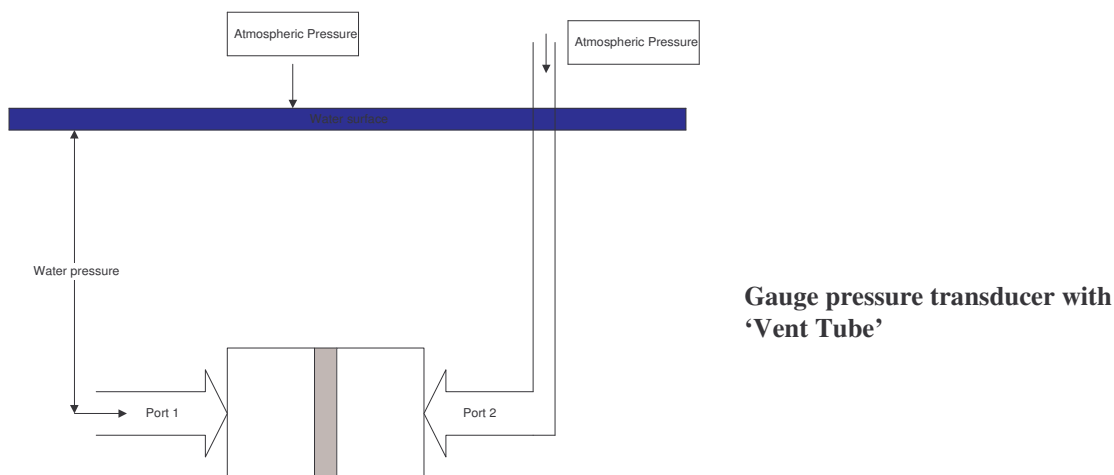


- Large liquid crystal display (LCD) with 126 by 70 mm viewing area
- Multiple character fonts: tide is displayed in extra large characters
- Background lighting facility provides good contrast in sunlight as well as by night
- Backlight Intensity Control
- LCD Contrast Control
- Easy operation using Function Keys, Cursor Keys and a Digital Panel Control
- 16 Channel, synthesized Radio Modem
- Wide Bandwidth without retuning
- Low/High Output Power selection capability
- Operates on internal battery and AC supply
- Bump less transfer from AC to DC power source and vice versa
- Internal battery charged by solar power or by AC supply
- Overcharge protection circuitry
- Unattended operation capability: automatic shut-off when battery voltage becomes too low - automatic restart when power supply restores to normal operation level
- Remote monitoring capability of power supply status: beside tide information, the transmitting station also broadcasts the power supply voltage level
- Connects to both analogue 0-20 or 4-20 mA transducers or microprocessor based digital transducers
- Menu guided selection of operation parameters
- 10000 record log capacity with automatic rollover
- Sturdy and tight connectors, extremely well suited for operation in wet environments
- Vyner compatible 'over-the-air' protocol
- Network operation: up to 10 transmitting stations may share the same frequency

Transmitter Mode

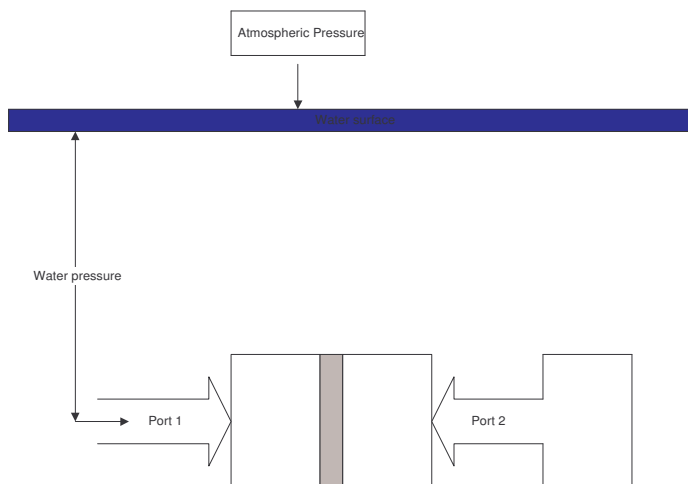
An MTU821-DTR operating in transmitter mode reads the raw data provided by the tide gauge connected to its input. This tide gauge may be a classical **analogue pressure transducer** with 0 to 20 or 4 to 20 mA output as well as microprocessor based **digital pressure transducers**.

We integrated a **barometric pressure sensor** in our MTU821-DTR Radio Tide Station, making it possible to connect gauge pressure transducers as well as absolute pressure transducers. Gauge pressure transducers require a **'vent pipe'** to sense the atmospheric pressure above the water surface. Dirt and moisture block this vent pipe and false tide measurements are the result. **Absolute pressure transducers** on the other hand measure the total pressure (including the atmospheric pressure) above the sensor. The MTU821 subtracts the barometric pressure information supplied by the internal sensor from the pressure information supplied by the underwater absolute pressure transducer. This results in accurate tide measurements without the need to use a fragile 'vent tube'



Absolute Pressure Transducer –

No Vent Pipe is required.





Receiver Mode

In Receiving Mode, the MTU821-WTR Radio Stations monitor continuously the frequency for tide messages. Valid messages from all stations on the frequency are temporary stored in memory.

Main station and secondary stations

The MTU821 menu permits selection of one **main station** and up to three **secondary stations**. The tide information from the main station is displayed in extra large character font for improved readability.

Power supply information of the main station is displayed in a smaller character font, together with tide and power supply information level of the three secondary stations.

Specifications

Range:

15 km and more, depending on selected output power, antenna type, antenna height and obstructions between transmitting and receiving antenna

Transmitting power:

Low Power: 0.5 W to 1 W

High Power: 3 to 5W (Low/High Power is a channel programmable parameter)

Number of channels:

16 front panel selectable channels

Frequency range:

439 to 470 MHz standard (400 to 430 MHz or 147 to 174 MHz on request)

Transmitting stations active on the network:

Maximum 10 transmitting stations may be simultaneously active on the same frequency

Power supply:

AC Mains: 85 to 264 VAC, 47 to 63 Hz

DC/Solar: 10-30 VDC/ 12-30 VDC

Internal battery (option): 12V/8.5 Ah SLA

Internal battery charger, charging current 2A maximum (Solar Panel input < 20 VDC)

Power source watchdog:

Unattended operation capability: automatic shut-off when battery voltage becomes too low.

Automatic restart when power supply restores to dependable operation level.

Automatic switch-off level: 10.7 V

Automatic restart level: 12.0 V

Accuracy:

Water level measurement: depending on tide gauge transducer

Analogue input: better than .1 % of scale.

Display:

Green LCD display, black characters

Viewing area: 126 * 70 mm

Number of dots: 240 horizontal * 128 vertical

Automatic background lighting time-out: 60 seconds

Keyboard:

Full alphanumeric capability using Digital Panel Control and Cursor Keys

5 function keys and 4 cursor keys

Digital Panel Control

Connectors:

AC supply connector

DC supply connector (external battery or solar panel)

Analogue output connector

Serial communication port connector

EF1 option connector

N-jack (antenna)

Instrument case:

Fiberglass-reinforced polyester case, 300 mm W * 400 mm H * 200 mm D

Protection Category: IP66



Company information

MGB-tech
Sint Ursmarusstraat 180
9200 Dendermonde
Belgium
Tel : +32 52 37 59 60
Fax : +32 52 37 59 63
info@mgb-tech.com
www.mgb-tech.com